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signed

Karen Owen

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Attention of Examiner: LARKIN
Art Unit: 2856
Phone: 571 272 2198

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No of pages including this page: //

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Serial No: 09/241,744 Our Ref: 406-01US
Confirmation No: 9118
Applicant: EINARSON, Murray D.

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RE-SENDING MATERIALS AS ORIGINALLY TRANSMITTED ON 30 JANUARY 2004.

In response to our telephone conversation of today, we now enclose the response to the FINAL ACTION as transmitted to the USPTO on 30 January 2004.

A copy of our transmission receipt is also enclosed.

Submitted by:

Anthony Asquith
Regn 32373
Agent for the Applicant

Enclo:
fax transmission cover (30 January 2004)
remarks (4 pages)
amendment to claims (4 pages)
fax transmission receipt

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Karen Owen

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Attention of Examiner: POLITZER, Jay L.
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Phone: 305 4930

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No of pages including this page:9

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Serial No: 09/241,744 Our Ref: 406-01US
Applicant: EINARSON, Murray D.

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RESPONSE TO OFFICE FINAL ACTION

This is in response to the final action issued, 26 November 2003.

Please refer to the attached page titled REMARKS.

Submitted by:

Anthony Asquith
Regn 32373
Agent for the Applicant

Enclo:
remarks (4 pages)
amendment to claims (4 pages)

FAXED 30 Jan 2004

US.Pat.Ap. 09/241,744 Docket 406-01US

Remarks
responsive to (Final) O/A dated 26 November 2003.

1. Claims 27-31 have not been examined. For this reason, we request that this Office Action be withdrawn.

It will be recalled that the PTO mislaid the file in this case. We has a number of exchanges with the PTO about this, and, as requested, we submitted the documents the PTO needed to rebuild its file.

We wished also to submit some claim amendments. In a telecon with the examiner, he advised against submitting the amendments, at that time, on the grounds that, since he had no knowledge as to the whereabouts of the file, he could not undertake to match up the new claims with the case. However, in fact we did submit the new claims, to be sure we had them on file, as we felt that the US PTO must have a mechanism for matching up amendments with files, contrary to the examiner's fears. We submitted the additional claims actually on 24 March 2003.

Claims 27-31 should have been examined along with claims 1-6,16-20,26.

2. It now appears the examiner's fears were justified, in that the amendments we submitted have not been entered. If they have indeed not been entered, we request that the new claims now be entered, as of the date on which they were filed, namely 24 March 2003.

In case the claims 27-31 as submitted 24 March 2003 cannot now be located by the PTO, a copy is enclosed herewith.

3. In spite of the amendments, in fact the claims 1,16 as examined in the Office Action remain in the application, and we address the 35 USC 103 rejection thereof as follows.

The PTO position is that the person of ordinary skill in the art ("expert" hereinafter) would find it obvious to make the multi-channel pipe as shown by Harris in one long length. Although Harris shows the M-C pipe in sections, says the PTO, the expert would obviously "use unitary construction" if ease of handling were not an issue.

The PTO cites the Kohno and Larson precedents in support of its '103 rejection, noting that one-piece construction, in place of separate elements fastened together, is a design consideration within the skill of the art.

We request that the PTO position be reviewed, and the '103 rejection be withdrawn.

4. It is our position that the expert would not find it all obvious to replace the several sections of Harris's M-C pipe with a single length.

At each joint, the Harris system provides eight couplings 28 that have to be inserted into, and fixed into, sixteen sockets. That is repeated at each joint. We can guess there might be ten sections, i.e ten such joints, over the whole string of pipe sections. That would be one hundred and sixty joints, that have to be assembled, i.e pushed-together, by hand, on-site. Wells and other boreholes are often located in remote places. In the Harris system, the sections of pipe would be brought to the site on a truck. The technicians must also bring the hundreds of couplings they will need. The assembly work is done out in the open, perhaps in inclement weather.

Even assuming the technicians are reasonably careful and experienced, and are concerned with the integrity of the down-hole structures, we would discount as hopelessly impractical the idea that all of these hundreds of insertions would be done adequately. Probably, some of the couplings would leak; some of them would be mechanically insecure; some of the couplings would be damaged; some would even be missing.

Plus, even if all the joints were assembled perfectly, the presence of the couplings 28 in the channels means that the Harris interior channels are not smooth over the full depth of the channel. This is a problem, given that it is desired to pass a sensor or instrument down the channel, from the surface, in that the device might tend to snag on some of the couplings.

Plus, cross-sectional area within a well/borehole has a high premium. A good part of the cross-sectional area of the Harris channels is unusable, in that whatever passes down the channels has to fit through the smaller hollow interior of the coupling.

Plus, the Harris apparatus is used for monitoring underground conditions. The users of the data derived from Harris' apparatus want to be able to rely on the fact that a sample drawn from channel-A has not been contaminated by water leaking from channel-B. No expert, looking at how the Harris apparatus is put together, would have any confidence that the samples from the different depths would be uncontaminated.

Plus, joints cost money, both in terms of providing the extra components, and in terms of the on-site labour costs.

5. For the above reasons, we can take it that the skilled expert would be trying as hard as he could to come up with a way to not have the multi-channel pipe in sections. The expert would provide the multi-channel pipe all in one continuous length, if only he could think of a way of getting it to the site.

The borehole might be a hundred metres deep, and clearly there is no way the multi-channel pipe can be made to that length in a factory, and then shipped to the site. In other words, an expert will regard it as inevitable that multi-channel pipe for a borehole has to be shipped to the site in sections. The pieces have to fit on a truck. There is no way round the fact that the separate sections will have to be assembled together on-site.

6. The PTO notes the statement in lines 52-53 of Harris, that "The pipe 10 is formed from pipe sections 12 for ease of handling." The PTO position is that, if "ease of handling" were not an issue, the designer would have specified that the multi-channel pipe be provided in

one continuous length.

In our view, the expert would not regard "ease of handling" on a maybe-yes-maybe-no basis, but rather, it is the whole issue. A one-hundred-metre-long continuous length of tubing is, as a matter of commercial practicality, impossible to handle. If Harris could only have thought of a way of transporting it to the site, he would surely have made his multi-channel tubing in one continuous length.

7. The experts would know the behaviour of polyethylene tubing. There is no suggestion, in Harris, of arranging the multi-channel tubing into a coil. Harris says his pipe can be fabricated in stainless steel, which cannot be coiled, but leaving that aside let us take it that the world is familiar with the notion of arranging a long length of plastic tubing into a coil, as a generality.

Let us also take it that the experts know that it is a simple matter to ship a long continuous length of tubing, if the tubing can be rolled in a coil of small enough diameter that the coil can be placed on a truck. The coil would have to be no more than e.g about three metres in diameter, if it is to fit on a truck.

Harris does not state the diameter of his pipe. However, the expert, perusing the Harris disclosure as a whole, will conclude that the multi-channel tubing as depicted therein is going to be in the region of, let us say, eight to fifteen cm in diameter.

Let us suppose the expert were to consider polyethylene tubing of 8cm diameter. The expert would know that such tubing cannot be coiled to a coil diameter as tight as three metres. The expert would know that plastic (polyethylene) tubing would simply kink and buckle, if coiled that tightly. And of course, the larger the diameter of the pipe, the more the tubing is likely to kink and buckle if coiled into a tight coil.

Knowing that 8cm plastic pipe cannot, as a matter of commercial practicality, be coiled into such a small coil that the coil would fit on a truck, the expert would conclude that the Harris pipe must indeed be supplied and shipped to the site in sections, as Harris himself teaches.

8. We are the ones who have recognised that, while 8cm plain polyethylene tubing will kink and buckle if rolled into a coil as tight as e.g three metres diameter, that same polyethylene tubing can be coiled as tightly as three metres, when the tubing has internal spokes. The internal spokes serve to maintain the integrity of the profile of the tubing, and prevent buckling. Still, of course, if coiled too tightly, even tubing that has internal spokes will kink; but the point is that the diameter at which kinking starts to become a problem will be very much tighter, if the pipe has spokes, than is the case with simple plain tubing.

That this is true, is clear enough with hindsight. But it is also clear that Harris did not realise it. Harris would surely have made his pipe in one long continuous length, if he had realised that he could coil it tightly enough that he could put the coil on a truck.

9. It is our position that, for the above reasons, the expert would not have considered it

obvious to provide the spoked tubing of Harris in one continuous length. We are the ones who realised that the spokes enable the tubing to be coiled to such a small diameter that the long continuous length can be placed on a truck for shipment to the borehole site. There is no teaching to that effect in the prior art. There is nothing in the prior publications to indicate that anyone had realised that such would be the case.

We ask that the 35 USC 103 rejection of claims 1,16 be withdrawn.

Submitted by:

Anthony Asquith
Regn 32373
Agent for the Applicant

Enclo:
- amended claims (4 pages)

Pat.Appl.Nr. 09/ 241,744 Docket 406-01US

Voluntary amendment to the claims, as submitted March 2003

Following entry of the amendments, the claims now standing in this application are:-
1-6,16-20,26-31, being seventeen claims in aggregate, of which claims 1,16,27 are independent.

Claim 1 (previously amended). An apparatus for in-ground fluid sampling comprising a flexible tube of unitary construction having a plurality of longitudinal chambers, at least one of the longitudinal chambers having an aperture for admitting the fluid into the at least one longitudinal chamber.

Claim 2 (previously amended). The apparatus of claim 1 wherein the flexible tube further comprises a continuous extruded column.

Claim 3 (previously amended). The apparatus of claim 1 wherein the flexible tube further comprises a non-jointed column.

Claim 4 (previously amended). The apparatus of claim 1 wherein the flexible tube further comprises a flexible polymeric material.

Claim 5 (previously amended). The apparatus of claim 1 wherein the flexible tube further comprises a cylindrical outer surface.

Claim 6 (previously amended). The apparatus of claim 1 wherein the plural longitudinal chambers are coextensive with the flexible tube.

Claims 7-15 (cancelled).

Claim 16 (previously amended). A method of obtaining data from depth discrete fluids disposed in an in-ground hole comprising the steps of:

installing a flexible tube of unitary construction in the in-ground hole, the flexible tube including a plurality of longitudinal chambers, at least of the longitudinal chambers having an aperture for admitting the fluid into the at least one longitudinal chamber;

and collecting the data.

Claim 17 (previously amended). The method of claim 16 further comprising the steps of:

determining a sampling depth; and

creating an aperture in the flexible tube to correspond with the sampling depth upon installation of the flexible tube.

Claim 18 (previously amended). The method of claim 16 further comprising the step of spacedly attaching at least one packer to the flexible tube.

Claim 19 (previously amended). The method of claim 16 further comprising the step of attaching a filter over the aperture.

Claim 20 (previously amended). The method of claim 16 wherein the step of collecting the data further comprises inserting a down-hole instrument in at least one of the plurality of longitudinal chambers.

Claims 21-25 (cancelled).

Claim 26 (previously added). The method of claim 16 wherein the step of collecting the data further comprises collecting a physical sample of the fluid from at least one of the longitudinal chambers.

Claim 27 (new). Apparatus for taking a sample from a borehole, wherein:

the apparatus includes a length of continuous multi-channel (C-M-C) tubing;

the C-M-C tubing is an extrusion in a plastic material, having an extruded profile;

the length of C-M-C tubing is one single unitary continuous length of extruded plastic;

the length of C-M-C tubing fits lengthwise down the borehole, from a support at the surface, to a depth D of the borehole;

the profile of the C-M-C tubing includes an outer wall, which encloses a hollow interior;

the profile includes dividing walls, which separate the hollow interior into N cavities;

over the length of C-M-C tubing, the N cavities of the profile define N longitudinal channels;

the apparatus includes a sampling port P1, which is located, when the length of C-M-C tubing is in the borehole, at a depth D1 of the borehole;

the sampling port P1 comprises an opening in the outer wall of the C-M-C tubing, into channel N1 of the N channels;
the sampling port P1 is so structured that a sample of liquid, from the borehole, outside the C-M-C tubing, at the depth D1, can pass through into the channel N1;
the C-M-C tubing is flexible enough that the C-M-C tubing can be wrapped in a coil of diameter C;
the diameter C is small enough that the single unitary continuous length of the C-M-C tubing, so coiled, is transportable to the borehole site;
the dividing walls are sufficient in number and robustness as to mechanically brace the profile of the C-M-C tubing when the length of C-M-C tubing is coiled to the diameter C;
the C-M-C tubing is of such structure that, having been coiled to the diameter C for transport, the single unitary continuous length can be uncoiled, and fed down into the borehole, from the surface.

Claim 28 (new). Apparatus of claim 27, wherein:
the apparatus includes a sampling port P2, which is located, when the C-M-C tubing is in the borehole, at a depth D2 of the borehole;
the sampling port P2 comprises an opening in the outer wall of the C-M-C tubing, into channel N2 of the N channels;
the sampling port P2 is so structured that a sample of liquid, from the borehole, outside the C-M-C tubing, at the depth D2, can pass through into the channel N2;
the sampling port P1 is separated vertically from the sample port P2, along the length of C-M-C tubing;
the apparatus includes a packer, which fits annularly between the C-M-C tubing and the wall of the borehole, and is effective to isolate the sampling port P1 at depth D1 from the sampling port P2 at depth D2;
whereby samples can be drawn independently from the two depths D1 and D2.

Claim 29 (new). Apparatus of claim 27, wherein:
the outer wall of the C-M-C tubing is formed as a right cylinder;
the profile includes a central hub, and the dividing walls are arranged as spokes, emanating substantially radially from the central hub to the outer wall;
whereby the cavities are formed between the spokes, and are sector-shaped.

Claim 30 (new). Apparatus of claim 29, wherein, in the profile, the spokes are radial, straight, and of constant thickness, between the

central hub and the outer wall.

Claim 31 (new). Apparatus of claim 29, wherein:
the central hub is hollow in profile, defining a central cavity;
and the spokes are six in number, whereby the profile includes, with the central cavity, a total of seven cavities.

30 Jan 2004
406-01US
to USPTO
Response to Final

TRANSACTION REPORT

FOR: Anthony Asquith & Co 519 888 6093

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